Report to Congressional Requesters

May 1988

PROCUREMENT

Multiyear Contracting and Its Impact on **Investment Decisions**





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The Honorable Sam Nunn Chairman, Committee on Armed Services United States Senate

The Honorable John W. Warner Ranking Minority Member, Committee on Armed Services United States Senate

As requested, we have reviewed the Department of Defense's (DOD) multiyear contracting method¹ of acquiring weapon systems to determine its effect on the defense industrial base. More specifically, we reviewed the effect of multiyear contracting on (1) encouraging prime contractors and subcontractors to invest in manufacturing equipment and (2) the competitive environment at the subcontractor level.

We found that although firms in the defense industry have generally continued to lag behind comparable nondefense firms in making equipment investments, many who made such investments cited their multi-year contracts as one factor influencing their investment decisions. Firms also cited several other influencing factors, such as total expected future sales and related profits, interest rates, and various government incentives. We also found that the prime contractors in our analysis used multiyear contracts with approximately 75 percent of their subcontractors. In addition, we found that multiyear contracting has not limited price competition at the subcontractor level.

Enhancing the defense industrial base has been a long-standing concern of the Congress and DOD because firms in the defense industry have not kept pace with comparable nondefense firms in investing in manufacturing equipment. The defense industry has been underinvesting, according to several authorities, in part, because DOD policies governing the method contractors use to determine profits from defense work and the use of annual contracting for major, long-term DOD weapon system acquisitions have discouraged investment. The Congress broadened DOD's multiyear contracting authority in 1981 as one of several efforts to

¹A multiyear contract is a contract for the purchase of property or services for more than 1, but not more than 5 program years. These contracts may also contain a cancellation clause or something comparable to reimburse contractors for certain costs in the event the government elects to cancel the contract after the first year.

encourage defense firms to modernize their plants to improve production efficiency and reduce the cost of acquiring weapon systems. Multi-year contracting was to help achieve these objectives by providing contractors greater assurance of their future defense business, and thus, helping to reduce the financial risks associated with equipment investments. Moreover, the Congress intended for both prime contractors and subcontractors to benefit from multiyear contracting without the government losing the benefits of competition.

The Congress has approved 39 multiyear contract initiatives through fiscal year 1986 for which DOD proposed and ultimately awarded contracts under the broader multiyear contracting authority. Of these initiatives, 29 were continuing or were to begin in fiscal year 1986 and totaled about \$11 billion (about 12 percent), out of DOD's \$93 billion in total funding obligations for procurement in fiscal year 1986. We reviewed multiyear contracting at six prime contractors having multiyear contracts totaling about \$13 billion. (See app. I for a list of the contractors.) A questionnaire was also used to survey over 300 subcontractors of 16 prime contractors having 22 multiyear contracts totaling about \$15.7 billion. In addition, we conducted on-site reviews at 13 subcontractors to gain a better understanding of our survey results. Our objectives, scope, and methodology are discussed in appendix I.

Multiyear Contracting Has Influenced Capital Investments

Some prime contractors and many subcontractors cited multiyear contracting as a significant factor influencing their capital investment decisions. Two of the six prime contractors we reviewed told us that they would not have made any of their capital investments—totaling about \$76 million—for these contracts had it not been for the advantages that multiyear contracts provided. (See app. II.) About 81 percent of the 263 subcontractors reporting that they had made capital investments indicated that multiyear contracting has influenced these investments. (See app. III.) The advantage of multiyear contracting most often cited was that it provides greater assurance of a stable, future defense business than annual contracting. Subcontractors are especially influenced by multiyear contracting because they generally view their annual contracts to be much less stable than their multiyear contracts.

When compared to annual contracting, four of six prime contractors told us that multiyear contracting did not influence the capital investment decision-making because either (1) they felt their programs were stable under both annual contracting and the later multiyear contracting and capital investments were made as necessary or (2) they did not need additional investments because of specific contract circumstances, such as contract size or the adequacy of the contractor's existing equipment to meet contract requirements.

Subcontractors most often reported that the reason multiyear contracting had little or no influence on their capital investments was that they had annual rather than multiyear subcontracts under a multiyear prime contract. More specifically, 17 of the 23 reporting a reason, cited either not having a multiyear contract with the prime contractor, or not having a multiyear contract with cancellation protection. Regulations encourage, but do not require, prime contractors with multiyear contracts to use multiyear subcontracts.

Multiyear Contracting Has Not Limited Price Competition at the Subcontractor Level

Multiyear contracting has facilitated subcontractor investment in manufacturing equipment without limiting price competition at the subcontractor level. Maintaining a competitive environment at this level is important for ensuring that the prime contractors, and ultimately the government, obtain products at the most reasonable prices. Overall, 71 percent of the subcontractors we surveyed reported that their most recent subcontracts under a multiyear prime contract were competed. There was little difference in the extent of competition between multiyear subcontracts and annual subcontracts. Moreover, for subcontracts that were not competed, subcontractors often reported that prime contractors with multiyear contracts can often negotiate more effectively with their subcontractors because of the larger and more stable business base that multiyear contracts provide in comparison to annual contracts.

Conclusions

Multiyear contracting has encouraged contractor investment, particularly at the subcontractor level, and has not limited price competition at the subcontractor level. Consequently, our findings suggest that multiyear contracting is a procurement technique that should contribute to improving the defense industrial base.

Agency Comments

We provided a draft of this report to DOD for its review and comment. DOD agreed with our findings and suggested certain changes to improve the report. We have incorporated these changes where appropriate.

As arranged with your Office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 30 days from the date of the report. At that time we will send copies to interested parties and make copies available to others upon request.

Frank C. Conahan

Assistant Comptroller General

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Abbreviations

DOD Department of Defense

FAR Federal Acquisition Regulation

IMIP Industrial Modernization Incentives Program

MANTECH Manufacturing Technology Program TECHMOD Technology Modernization Program

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Objectives, Scope, and Methodology

We performed our review at the request of the Senate Committee on Armed Services. We were asked to evaluate a minimum of six weapon system programs (including the F-16 Falcon aircraft and the UH-60 Black Hawk helicopter) under multiyear contracts to determine whether this contracting method has encouraged contractor investment in manufacturing technology. In subsequent discussions with Committee representatives, we agreed to:

- provide information on the level and type of defense contractor capital investment in manufacturing equipment and the major factors contractors consider when investing;
- determine what, if any, impact multiyear contracting has had on contractors' capital investment decisions and what factors contribute to or detract from contractors making such investments; and
- determine whether multiyear contracting influences subcontractor competition.

We also agreed to address these issues at two levels—prime contractors and first-tier subcontractors. Prime contractors have overall contractual responsibility to DOD for producing weapon systems and have been the object of several DOD and congressional initiatives to modernize their manufacturing equipment. First-tier subcontractors provide parts and materials to prime contractors that represent significant contract costs and, therefore, have a potential for obtaining substantial benefits from multiyear contracting.

We reviewed 6 prime contractors and 13 subcontractors under multiyear prime contracts. Five of the prime contractors had multiyear contracts involving each of the three services (the Army, Air Force, and Navy), totaling about \$9.9 billion, or about one-half, of the \$19.7 billion under 26 multiyear contracts to be completed by fiscal year 1987. These reviews involved discussions with key contractor and government officials and a review of pertinent records regarding contracting, capital investment decision-making, and subcontractor price competition.

¹We excluded the B1-B program due to its atypical high unit cost and limited production.

The six prime contractors and their programs are listed below.

Prime contractor	Program	
1. General Dynamics—Ft. Worth Division	F-16 aircraft	
2. Grumman Aerospace	C-2A aircraft	
3. LTV	Multiple Launch Rocket System	
4. Rockwell International	NAVSTAR Global Positioning System satellite	
5. Sikorsky Aircraft	Black Hawk helicopter	
6. General Dynamics—Land Systems Division	M1A1 tank	

By including the 5 prime contractors that had contracts to be completed by fiscal year 1987, we were provided an opportunity to determine actual capital investments made under the multiyear contracts. The sixth prime contractor was not awarded a multiyear contract, which covered 5 program years, until fiscal year 1987. However, we included this contractor because government and contractor officials told us that the contractor had negotiated a reduced contract price based on the contractor's specific plans to invest in more efficient manufacturing equipment and processes as a result of the multiyear contract.

To obtain the perspectives of subcontractors on how multiyear contracting affected their capital investment decisions and competitive environment, we mailed questionnaires to first-tier subcontractors with a subcontract under a multiyear prime contract. We included subcontractors, identified by prime contractors or DOD contracting offices, that had one or more subcontracts with an average annual value of at least \$100,000 under 22 of the 26 multiyear prime contracts to be completed by fiscal year 1987. These 22 contracts totaled about \$15.7 billion, of which about \$6.4 billion, or about 41 percent, were under subcontracts. We excluded two contracts totaling about \$4 billion because the prime contractors provided incomplete or inaccurate subcontractor information. We excluded two others totaling about \$25.4 million because the contractors reported that they had no subcontracts with an average annual value in excess of \$100,000. We established the \$100,000 cut-off because (1) it provided what we believe is an adequate data base for meeting the survey's objectives while minimizing the burden to prime contractors in identifying and reporting their subcontractors and (2) DOD also uses this same amount when specifying the applicability of certain regulations, such as the cost accounting standards, to subcontractors. Prime contractors and DOD contracting offices reported 958 subcontracts involving 784 different subcontractors meeting our \$100,000 criterion

Appendix I Objectives, Scope, and Methodology

representing about \$4.8 billion, or about 75 percent, of the \$6.4 billion total amount subcontracted.

To conduct our analysis, we eliminated 21 subcontractors from our survey because the information supplied by the prime contractors was inadequate for locating the subcontractors, the subcontractors had gone out of business, and other reasons. We received responses from 578 of the 763 subcontractors remaining in our survey, of which 261 reported that they did not meet or were not certain whether they met our criteria or were only involved in a nonmanufacturing activity, such as product distribution. Our analysis is based on the remaining 317 subcontractors reporting that they met our criteria.

In addition to the subcontractor questionnaire survey, we conducted onsite reviews at 13 subcontractors. We selected these subcontractors to obtain a mix of subcontract dollar amounts and subcontractor size and subcontractors who reported that multiyear contracts had either some effect or little or no effect on their capital investment decisions. We have not listed the subcontractors we visited to ensure the confidentiality of the information they provided, much of which they consider to be business sensitive.

Our review was performed in accordance with generally accepted government auditing standards from December 1986 to September 1987.

The Congress broadened DOD's multiyear contracting authority in 1981 to help reduce the costs of acquiring weapon systems and to enhance the defense industrial base by encouraging contractors to invest in equipment, facilities, and advanced technology. We examined the extent this broader multiyear contracting authority encouraged prime contractors and subcontractors to invest in manufacturing equipment and improved the competitive environment at the subcontractor level. In this appendix, we

- provide background information on the primary causes of underinvestment within the defense industry,
- discuss factors contractors consider before investing in manufacturing equipment, and
- identify the circumstances in which multiyear contracting either has or has not influenced contractor investment decisions.

Background on Defense Industry Capital Investments

Defense industry firms have historically lagged behind comparable nondefense industry firms in investments for manufacturing equipment and facilities. This underinvestment is a concern because it can limit manufacturing efficiency which, in turn, can result in increased weapons' costs. In general, improved manufacturing productivity or efficiency follows from increased capital investments, particularly for new, automated, labor-saving equipment that incorporates current advancements in manufacturing technology. Several factors have contributed to the underinvestment, including the DOD contracting process, the nature of the defense market, and low production volume for defense items. DOD and the Congress have taken positive steps to encourage more investment in the defense industry, including passing legislation and implementing procedures to broaden DOD's multiyear contracting authority.

Underinvestment in the Defense Industry Has Been a Long-Standing Concern

Underinvestment in the defense industry is a well-known and long-standing problem, but authorities differ on its current severity. DOD has issued several reports examining investments made by defense contractors. The 1976 DOD report, Profit '76, found that defense contractors' assets represented on the average about 35 percent of annual sales while comparable nondefense firms' assets represented about 63 percent of annual sales. The Air Force report, Profit Study '82, concluded that capital investment within the defense industry had increased but overall investment remained less than within the nondefense sector. DOD's 1985 study, Defense Financial and Investment Review, concluded that while

defense firms were underinvesting relative to nondefense firms, the defense firms had more consistently increased their capital assets in the preceding 9 years at a substantially higher rate than the nondefense sector. However, a 1985 study by the Logistics Management Institute reaches a different conclusion, reporting that the growth rate of defense contractor investments has lagged behind that of comparable nondefense manufacturers since the mid-1970s. At least two major academic studies¹ have also reported that defense contractors have underinvested. Since 1971, we have consistently expressed concern² about the underinvestment by defense firms. Our 1986 report³ restates this, concluding that defense contractor investment increased from 1975 to 1983, but that it has lagged behind the corresponding rate of increase for nondefense firms.

Causes of Underinvestment in the Defense Industry

The defense industry has been underinvesting, according to several authorities, because DOD policies governing the use of annual contracts and the method contractors use to determine profits from defense work have discouraged contractor investment. Moreover, the technological complexity of the defense market and low production volumes of many defense products can also discourage investment.

Even though the government may include an option in annual contracts to purchase goods for future program years, the government is not required to exercise these options. This can create uncertainty among defense contractors regarding their future expected production volumes and rates, and consequently, their profits. This uncertainty may become magnified when DOD is the sole buyer of the product and the capital equipment purchased to meet contract production requirements cannot be used to manufacture other defense or commercial products. Should an expected series of annual contracts not materialize, the contractor could be left with unrecoverable investment expenses. Moreover, under DOD's past profit policy, contractor profits have been essentially based on the actual costs incurred by the contractor. Since lower costs produce lower profits, the policy tended to discourage contractor investments in manufacturing equipment to improve productivity and reduce costs.

¹Jacques S. Gansler, The Defense Industry (Cambridge, Mass., MIT Press, 1980) and J. Ronald Fox, Arming America (Boston, Mass., Harvard University Press, 1974).

²Defense Industry Profit Study (B-159896, Mar. 17, 1971); Review of Profit '76 (PSAD-77-75, Feb. 17, 1977); and Recent Changes in the Defense Department's Profit Policy—Intended Results Not Achieved (PSAD-79-38, Mar. 8, 1979).

³Assessment of the Study of Defense Contractor Profitability (GAO/NSIAD-87-50, December 1986).

In addition, the low production volumes tend to reduce sales revenues that contractors need to recover investment costs and make a profit, and technological complexity can increase the cost of equipment needed to produce these products. When these factors are present, contractors are more likely to employ highly skilled labor rather than invest in costly but more efficient manufacturing equipment.

Efforts to Encourage Contractor Capital Investment

The Congress and DOD have taken several actions to encourage contractor capital investment, including authorizing and implementing broader multiyear contracting authority, revising DOD's profit policies, and instituting specific incentive programs. These actions have been implemented over the past several years and continue to be refined.

Multiyear contracting was first authorized in 1963. In 1975, the Congress imposed a \$5 million cancellation ceiling on multiyear contracts that placed a limit on the government's maximum liability to the contractor when canceling a multiyear contract. It could only be exceeded through specific statutory authority for individual programs. The \$5 million provision effectively restricted multiyear contracting to a small number of low value contracts. Defense regulations further limited multiyear contracting by excluding recurring costs, such as material costs that vary directly with the production rate, from cancellation protection. Excluding these costs discourages contractors from making prudent purchases of materials in advance of production because they must do so at their own risk. Advanced material purchases can be advantageous in obtaining the lowest material cost and ensuring its availability when needed for production.

In 1981, the Congress raised the cancellation ceiling to \$100 million, required that certain congressional committees be notified in writing when multiyear contracts exceeded this ceiling, and authorized that recurring costs be included in the ceiling. To minimize the government's risks associated with these provisions, individual programs must meet several criteria to be selected for multiyear contracting. These criteria consider (1) benefits to the government if a multiyear contract is approved, (2) degree of confidence in contract cost and savings estimates from such contracts, and (3) stability of system design, requirements, and funding.

Since the DOD report <u>Profit</u> '76, DOD profit policies have been evolving to provide incentives for contractor capital investment. In October 1976,

DOD began recognizing contractor facility investments in profit negotiations and allowing the cost of capital for these investments (the cost of borrowing money associated with capital investments) under most negotiated contracts. In 1980 and again in 1987, DOD revised its profit policy to further encourage investment by giving more weight to the level of facility investment and less weight to costs when negotiating contractor profits.

pop has also implemented the Industrial Modernization Incentives Program (IMIP) and the Manufacturing Technology (MANTECH) program to further encourage contractor capital investment. DOD implemented IMIP in 1986 after an extensive test program to offer incentives to encourage defense contractors to invest their own funds for capital equipment and other productivity improvements. The primary incentive is a mechanism that permits industry to share in program savings. The government may also assume part of the contractors' investment risks by giving them some investment protection if the contractor is bearing an unacceptable monetary risk and the government will benefit. This provision is similar to the cancellation protection under multiyear contracting. IMIP can complement multiyear contracting in encouraging contractors to invest in manufacturing equipment because, unlike multiyear contracting, approval for contractor participation in IMIP does not depend on a stable weapon system configuration and can be implemented for either a manufacturer's product line or total facility.

MANTECH's aim is to encourage practical applications of new production technology, generally on a project-by-project basis. MANTECH involves significant technical and financial risks, and DOD guidance states that government funding for MANTECH projects is essential. IMIP can both identify candidates for and encourage implementation of MANTECH projects.

Factors Contractors Consider in Making Capital Investments

With an annual procurement budget of over \$80 billion in fiscal year 1988, DOD has a vital interest in encouraging capital investment in the defense industry to ensure a production base that will most economically provide for the national defense. In structuring policies to achieve this goal, DOD has sought to identify the factors that may influence contractors' investment decisions.

DOD has concluded that two of the most significant factors guiding investment behavior in the defense industry are the firm's sales and the cost of investment financing, that is, the interest rate firms face when borrowing to finance an investment project. Other influencing factors

identified by DOD include profits from sales and government tax policies. We identified similar factors in our review. We found that contractor achievement of an acceptable rate of return and contractors' perceptions of the stability of future expected sales are primary factors in investment decisions, with greater stability encouraging greater capital investment. Production volume and procurement of more technically advanced equipment were also important factors, while the significance of other factors, such as interest rates and government policies, varied among contractors.

Multiyear Contracting Has Influenced Contractors' Capital Investment Decisions

Many contractors, especially subcontractors, said the benefits associated with multiyear contracting have influenced their capital investment decisions. More specifically, 2 of 6 prime contractors and 213 of the 263 subcontractors (about 81 percent) who made capital investments reported that the benefits derived from multiyear contracting had influenced their decisions. These contractors reported that multiyear contracting, unlike annual contracting, gives them greater assurance of the level of future defense sales, an important factor they consider when deciding how much to invest.

As a result, many contractors reported that they purchased more and better capital equipment than they would have without multiyear contracts. About 88 percent of the subcontractors we surveyed who reported that multiyear contracts had influenced their capital investment decisions also reported that they bought manufacturing equipment which they would not have bought without these contracts. About 88 percent reported their investments were for more technologically advanced manufacturing equipment, and about the same number reported that they bought equipment sooner under multiyear contracts.

The two prime contractors reporting that multiyear contracts influenced their capital investment decisions had invested or were planning to invest a total of about \$76 million in capital equipment that they said would not have been purchased without the benefits associated with the multiyear contracts. These investments represent a substantial part of their total capital investments for the weapon systems involved. One of the firm's plans for investing in equipment led to an estimated \$100 million decrease in the negotiated price of the \$3.1 billion firm fixed-price contract, according to contractor negotiators and the firm's Director of MANTECH. These savings represent over one-fourth of the \$359 million in

savings expected under the multiyear contract in comparison with successive annual contracts. We did not independently determine the benefits to the government that may have resulted from the capital investments facilitated by multiyear contracts.

Reasons That Multiyear Contracting Influences Contractor Capital Investments

Multivear contracting tends to encourage subcontractors and some prime contractors, in varying degrees, to invest in capital equipment for several reasons. First, the two prime contractors who told us that multiyear contracting had greatly influenced their capital investments stated that this contracting technique enhances the stability of weapon system funding and quantity requirements by guaranteeing the contractor specific production quantities and funding for the period of the contract. pod may cancel a multiyear contract with a contractor. When the contract provides the contractor cancellation protection, DOD is generally required to reimburse the contractor for nonrecurring costs, such as the cost of facilities acquired to perform the work, and in some cases, certain recurring costs, such as materials and labor that vary with production costs. However, according to the Office of the Secretary of Defense, only 1 of DOD's 39 initiatives congressionally approved for multiyear contracting and ultimately awarded multiyear contracts through fiscal year 1986 had been canceled as of September 1987.

Second, in shielding the winning contractor from competition, multiyear contracting ensures the contractor's future business for the period of the contract. Although multiyear contracts reduce the number of opportunities for competition during the life of the program compared to successive annual contracts, multiyear contracting probably has not inhibited competition for the weapon systems' production prime contracts because competition generally has not occurred on these contracts in the past. Also, none of the six prime contractors included in our review had competed for their current multiyear contracts. However, we have previously reported⁴ that the Office of the Secretary of Defense is working to improve competition by encouraging the services to use dual sourcing—a competitive procurement technique that splits contract awards between two or more sources. Moreover, multiyear contracting has not limited competition at the subcontractor level, as discussed in appendix III.

 $^{^4}$ Acquisition: Status of the Defense Acquisition Improvement Program's 33 Initiatives (GAO/NSIAD-86-178BR, Sept. 23, 1986).

Multiyear contracts tend to have a greater influence on a contractor's capital investments when these contracts represent a substantial portion of the contractor's total sales. For example, the two prime contractors we reviewed who reported that multiyear contracting influenced their capital investment decisions had multiyear contracts representing about 59 and 85 percent of their total annual sales volume. At the same time, two other prime contractors had multiyear contracts that also represented a substantial part of their total sales, 88 and 51 percent, respectively. They reported that multiyear contracting had little or no influence on their capital investment decisions. However, these contractors told us that other factors, such as their involvement in other DOD investment incentive programs, prevented the multiyear contracts from having an effect on their investment decisions. Subcontractors who reported the greatest effect of multiyear contracting on their investments had a much larger portion of their sales under multiyear contracts (32 percent) than subcontractors who reported little or no effect (6 percent).

Finally, multiyear contracting can also encourage investments when contractors anticipate being awarded subsequent multiyear contracts. One of the six prime contractors we visited and about one-third of the subcontractors reporting an effect from multiyear contracting, indicated that the expectation of future multiyear awards greatly influenced their capital investment decisions. According to a prime contractor we visited, expectation of a follow-on multiyear contract encouraged investment in equipment although this may not have been profitable to do during a single multiyear contract, particularly when it is less than 5 years. This expectation can encourage investment because some equipment requires up to 2 years to acquire and make operational and up to an additional 2 to 3 years to recover the initial investment costs. Moreover, two contractors told us that because this was their initial experience with multiyear contracting, they were cautious about making capital investments. However, after gaining experience with multiyear contracting and seeing its benefits, nearly all of the contractors we visited expressed satisfaction with the technique and hoped to be involved in future multiyear contracts.

Circumstances in Which Multiyear Contracting Does Not Facilitate Contractor Capital Investments

A variety of circumstances can limit the effect of multiyear contracting on contractor capital investment decisions. One important factor that typically applies to prime contractors is related to program stability preceding multiyear contract award. As a result, several of the prime contractors told us that the multiyear contract did not provide any further assurance of their program's stability—an important consideration for future investment. Another factor important at the subcontractor level is that some prime contractors do not use multiyear subcontracts. Other factors that can apply to prime contractors and subcontractors are contractor participation in other DOD programs to enhance capital investment prior to the multiyear contract and the size of the multiyear contract.

Prime Contractors With Multiyear Contracts Do Not Always Use Multiyear Subcontracts

Some prime contractors have not fully extended multiyear contracting to their subcontractors who perform a substantial portion of the work under multiyear prime contracts. The use of multiyear subcontracts could contribute to achieving the congressional intent that subcontractors obtain the benefit of this contracting technique. The 1981 House Armed Services Committee report recommending the expanded scope of multiyear contracting expressed particular concern that the multiyear contracting provisions be applied to encourage broader subcontractor participation. The Committee's report stated that extensive testimony indicated that subcontractors were concerned with the lack of program stability and the failure to share in prime contractor's benefits from improved procurement procedures. The Committee recommended that the Secretary of Defense take particular notice of these concerns in drafting regulations to implement the expanded multiyear contracting concept.

Our survey results indicate that some subcontractors are not benefitting from multiyear contracting primarily because some prime contractors have chosen to use annual contracts with their subcontractors. Out of 263 subcontractors having major subcontracts under a multiyear prime contract and investing in equipment, about one-fourth reported that they had annual contracts, including many who attributed this as a factor in the multiyear prime contracts not having influenced their capital investment decisions. Although regulations do not require prime contractors to use multiyear subcontracts, the regulations do encourage the prime contractor to do so if certain conditions are met. The Federal

 $^{^5}$ About 41 percent, or \$6.4 billion, of the \$15.7 billion in multiyear prime contracts to be completed by fiscal year 1987 (excluding the B1-B program) were subcontracted out.

Acquisition Regulation (FAR) appropriately stipulates certain conditions that should be present before multiyear subcontracts are used: (1) the subcontract item is of stable design and specification, (2) the quantity required is reasonably firm and continuing, (3) effective competition may be enhanced, and (4) multiyear subcontracts can reasonably be expected to reduce prices. The FAR's conditions closely match the criteria for approving multiyear prime contracts and should preclude prime contractors from using multiyear subcontracts when the cited conditions do not exist. For example, one prime contractor told us that multiyear subcontracts were not used because, in some cases, the subcontractors could meet the prime contractor's needs more efficiently by producing the entire multiyear requirement under an annual contract. Moreover, of those subcontractors we surveyed reporting that they did not have multivear subcontracts, about one-fourth also reported that their subcontracts involved more than 1 year of the multiyear prime contract's requirements and, in some cases, involved economic order quantities. (See app. III for additional discussion.)

Other Factors Limiting Multiyear Contracting's Effect

We identified two other factors that have limited the opportunity for multiyear contracting to influence contractors' capital investment decisions. One factor is contractor participation in other DOD programs designed to enhance the industrial base. For example, one of the multiyear prime contractors we visited had invested about \$150 million under an Air Force incentive program (now under IMIP) from 1977 through 1985. This amount represented about 54 percent of the contractor's approximately \$276 million in total investments for the period. The prime contractor told us that this incentive program was the main driver for its capital investments. The prime contractor was awarded its first multiyear contract in August 1983, 6 years after first participating in the program.

The nature and size of the multiyear contract in relation to the contractor's total business can also limit the contract's effect on investment decisions. For example, one of the prime contractors we visited told us that its multiyear contract did not affect capital investment decisions, in part, because of the small quantity and low production rates associated with the contract. The 5-year multiyear contract for 39 aircraft had a target price of \$678 million representing only about 10 percent of the contractor's total business. Also, the contractor's current plant capacity could meet the multiyear contract's production requirements, and the investments that were made would have been necessary even under annual contracts. In addition, the multiyear contract was for a

reprocurement of an aircraft originally produced in the 1960s that did not require new manufacturing technology. The subcontractors we surveyed who reported that multiyear contracting had not materially affected their capital investments had only about 6 percent of their sales related to multiyear contracts.

Survey Results of Subcontractors Working Under Multiyear Prime Contracts

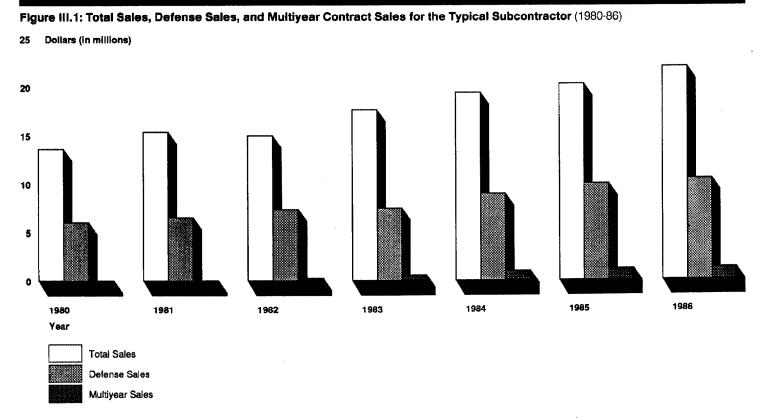
Introduction

We surveyed subcontractors working under multiyear prime contracts to obtain their perspectives on the effect of these contracts on the subcontractors' capital investments and competitive environment. The subcontractors surveyed most often reported that the factors having the greatest influence on their capital investment decisions were future expected sales and achievement of an acceptable rate of return on their investment. About 81 percent of the subcontractors we surveyed reported that multiyear prime contracts influenced their investment decisions primarily because these contracts reduce investment risks by providing a more secure business base. When multiyear contracting did not influence investment decisions, subcontractors most frequently attributed this to the prime contractors not using multiyear subcontracts. Multiyear contracting has also facilitated subcontractor investments without limiting competition.

Subcontractor Characteristics

The typical firm¹ in our survey (1) employed 298 full-time equivalent employees, about 65 percent of whom were directly engaged in manufacturing at the time of our survey and (2) had total sales during 1986 of \$22.1 million with about \$10.5 million (about 48 percent of total sales) related to defense and \$1.8 million (about 17 percent of defense sales) under multiyear contracts. (See fig. III.1.)

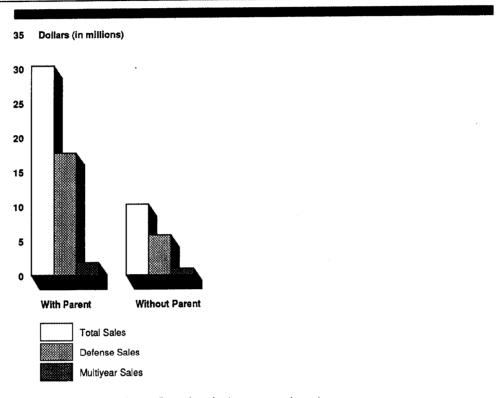
¹The term "firm" was used throughout our questionnaire to refer to the smallest operating unit holding the subcontract. Thus, this term may refer to a corporation, a business, a subsidiary, a division, a branch, or other business entity. The term "typical" refers in all cases to the statistical median. For example, when referring to number of employees of the typical firm, this is the firm that has the median number of employees, that is, an equal number of firms had less employees as had more. The term "average" refers in all cases to the statistical mean.



Note: Dollar values are the median sales of subcontractors investing.

About 59 percent of the subcontractor firms reported they were owned or controlled by a parent firm. The typical subcontractor in this category employed 364 full-time equivalent employees and had about \$30.37 million in 1986 sales, with about \$17.75 million related to defense (about 58 percent of total sales) and \$1.84 million (about 10 percent of defense sales) under multiyear contracts. For the remaining subcontractors not owned or controlled by a parent firm, the typical firm employed 155 full-time equivalent employees and had about \$10.27 million in 1986 sales, with about \$5.6 million (about 55 percent of total sales) defense related and about \$953,750 (about 17 percent of defense sales) under multiyear contracts. (See fig. III.2.)

Figure III.2: Comparison of Sales for the Typical Subcontractor With and Without Parent Firms, 1986



Note: Dollar values are the median sales of subcontractors investing.

Subcontract Characteristics

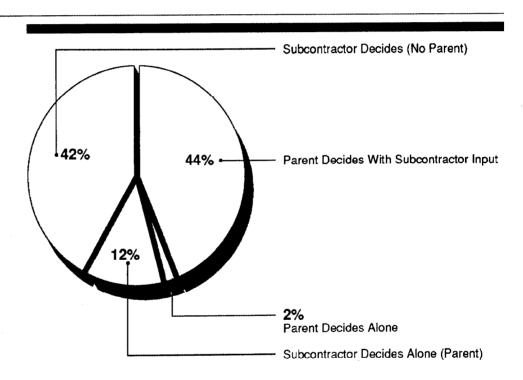
Subcontractors most commonly reported that their most recent subcontract under a multiyear prime contract was a 36-month, firm fixed-price contract with a total price of about \$1.85 million. They also reported that their subcontracts

- met the prime contractors' product requirements for more than 1 year (about 67 percent),
- met the prime contractors' product requirements for 1 year (about 20 percent),
- · involved economic order quantities (about 13 percent), and
- were immediately preceded by another production subcontract for similar products under the same program with the same prime contractor (about 68 percent).

Capital Investment Decision-Making

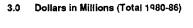
Both the subcontractors and their parent firms, when they existed, participated in major capital investment decision-making to varying degrees. In most cases (about 54 percent), the subcontractors made the final decisions about major capital investments because they had no parent firm (about 42 percent) or the parent firm had delegated this authority to the subcontractor (about 12 percent). Conversely, the subcontractors proposed investments and the parent firm made the final decision in 44 percent of the cases, and the parent firm both proposed and made the final investment decision in 2 percent of the cases. (See fig. III.3.)

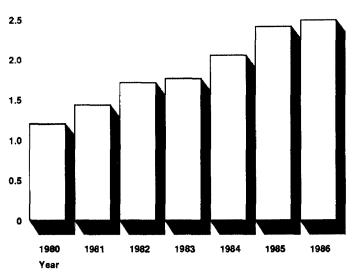
Figure III.3: Authority for Capital Investment Decision



Overall, the typical subcontractor's investments in capital equipment increased from \$1.2 million during 1980 to \$2.49 million during 1986 (in actual dollars not adjusted for inflation). Comparing investments to total sales is a common measure of investment that facilitates comparisons at various points in time and between different types of firms. The typical subcontractor's investments increased from 9.2 percent of total sales in 1980 to 11 percent in 1986, peaking at 11.2 percent in 1985. (See fig. III.4.)

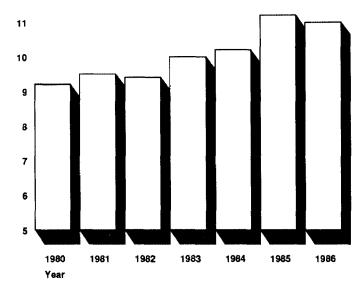
Figure III.4: Capital Equipment Investments for the Typical Subcontractor





Note: Dollar amounts are the median investments of subcontractors investing.

12 Percent of Total Sales (1980-86)

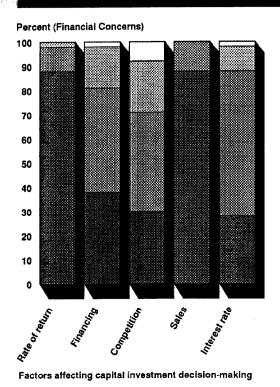


Note: Percentages are the median values of subcontractors investing.

Appendix III Survey Results of Subcontractors Working Under Multiyear Prime Contracts

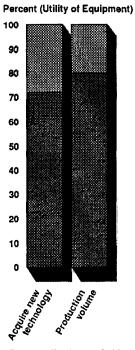
Of the 263 subcontractors making investments since being awarded a subcontract under a multiyear prime contract, 258 reported on the factors they considered when making these investments. More than 189 (74 percent) reported that future expected sales, production volume, achievement of an acceptable rate of return on investment, and procurement of more technically advanced equipment are each very important or essential factors in evaluating capital investment decisions. The two most frequently cited factors (88 percent) were future expected sales and achievement of an acceptable rate of return. About 38 percent of the subcontractors reported that they had no basis for determining the importance of various government investment incentive programs, such as the IMIP and MANTECH programs. (See app. II.) Of those remaining, at least 67 (about 46 percent) reported that these incentive programs were of little or no importance in their decision-making. About 9 percent reported that at least one of the incentives was either essential or very important. Subcontractors generally reported that other government policies, including DOD's profit policy and investment tax credits, were of at least some importance to investment decisions. (See fig. III.5.)

Figure III.5: Importance of Various Factors in Capital Investment and Decision-Making



No basis to determine
Of little or no importance
Of some or moderate importance
Essential or very important

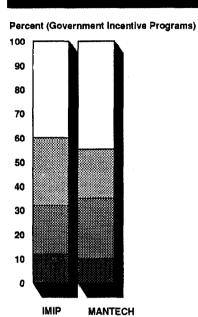




Factors affecting capital investment decision-making

No basis to determine
Of little or no importance
Of some or moderate importance
Essential or very important

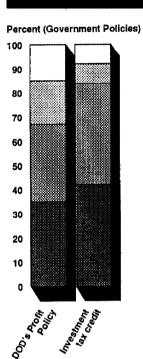




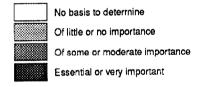
Factors affecting capital investment decision-making

No basis to determine
Of little or no importance
Of some or moderate importance
Essential or very important

Figure III.5: (Cont'd)



Factors affecting capital investment decision-making



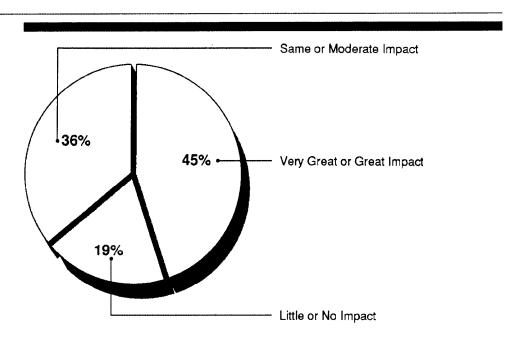
Multiyear Contracting Helps Capital Investments

Subcontractors generally reported that multiyear prime contracts influenced their decisions to invest in manufacturing equipment. Multiyear contracts encouraged the subcontractors to invest in more technologically advanced equipment that they either would not have invested in or would not have invested in as soon, under an annual prime contract. Subcontractors most frequently reported that multiyear contracts helped investments by reducing investment risks. When multiyear prime contracts did not help investments, subcontractors most frequently attributed this to the prime contractors' continued use of annual subcontracts.

Extent That Multiyear Contracts Help Investments

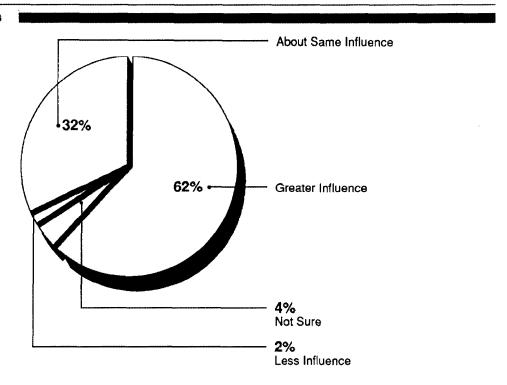
About 81 percent of the 263 subcontractors making capital investments reported that their subcontracts under multiyear prime contracts had some effect on these investment decisions. About 45 percent reported a great or very great effect. (See fig. III.6.)

Figure III.6: Multiyear Prime Contracts'
Overall Impact on the Capital
Investments of Subcontractors



Furthermore, when comparing the effect of multiyear prime contracts to annual prime contracts on the subcontractor's decision to invest in manufacturing equipment, about 62 percent of those responding indicated that the multiyear contracts had greater influence, 32 percent indicated that the influence was about the same, and 2 percent indicated the influence was less under multiyear prime contracts. (See fig. III.7.)

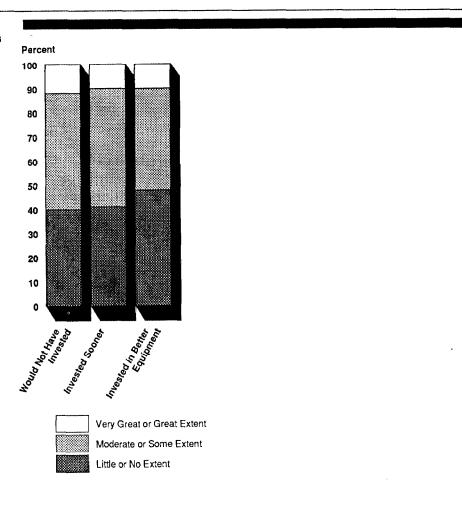
Figure III.7: Influence of Multiyear Versus Annual Prime Contracts on the Capital Investments of Subcontractors



How Multiyear Contracts Help Investments

Many subcontractors reported that multiyear prime contracts helped their purchase of more technologically advanced capital equipment than would have been possible under annual contracts. Overall, about 88 percent of the subcontractors who reported that multiyear contracts had influenced their capital investment decisions also reported that they would not have made the investments without the multiyear contracts. About 86 percent reported that multiyear contracts influenced them to buy equipment sooner than originally planned, and 88 percent reported that they purchased more advanced manufacturing equipment. (See fig. III.8.)

Figure III.8: Extent to Which Multiyear Prime Contracts Influenced Investments of Subcontractors



Types of Equipment Investments

One hundred twenty-five subcontractors provided a total of 279 equipment investments that they reported had been helped by multiyear contracting and had also provided the greatest improvements in productivity of all their investments. The average investment for this equipment was about \$520,600; the median, \$140,000. The equipment ranged in cost from \$3,000 for a dry sand reservoir to \$21 million for asset modernization. Subcontractors most frequently (133) reported investments in various automated or computerized equipment, such as computer-assisted design and manufacturing equipment, robotics, and automated test equipment. A variety of other manufacturing and manufacturing-related equipment comprised the next largest category

Appendix III Survey Results of Subcontractors Working Under Multiyear Prime Contracts

(119), including, for example, milling machines and diecasting equipment. Other reported investments included testing equipment (25) and plant expansions (2).

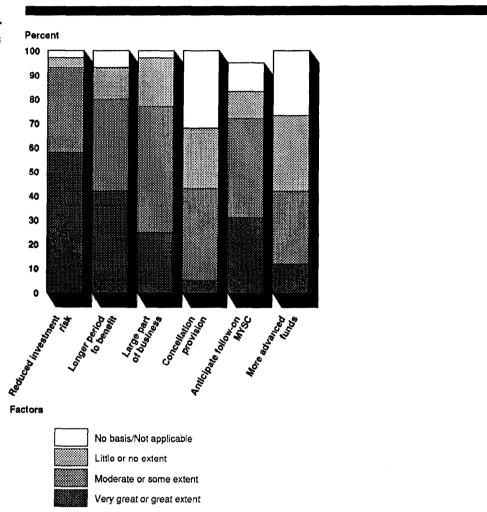
Circumstances in Which Multiyear Contracting Encourages Subcontractor Capital Investments

The subcontractors responding to our questionnaire cited several factors associated with multiyear contracting that encouraged capital investments. The most frequently cited factor was that multiyear prime contracts reduced investment risks by providing a more secure business base. Fifty-eight percent reported that this factor influenced investments to a very great or great extent. Another frequently cited factor was that multiyear contracts, when compared to annual contracts, gave firms more time between contract renegotiations to obtain the benefits from the economies of investing in manufacturing equipment. Forty-two percent indicated that this helped investments to a great or very great extent.

Other factors with less effect on investment decisions were that (1) sub-contracts represented a substantial part of the firm's business, (2) sub-contractors anticipated a multiyear contract to follow their current contract, (3) subcontracts included a cancellation provision, and (4) subcontracts provided more advanced procurement funds.² (See fig. III.9.) Firms citing the former factor reported an increasingly greater effect on investment decisions as multiyear contracts represented an increasingly greater portion of their business—from little or no effect when multiyear contracts represented about 4 percent of their total sales to a very great effect when they represented about 36 percent of sales. (See fig.III.10.)

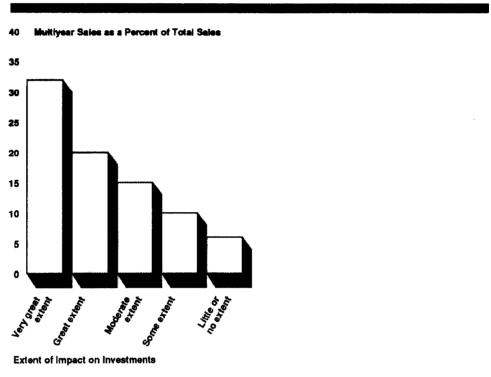
²Advanced procurement involves procuring long lead time components in one fiscal year and the related end item in the next fiscal year.

Figure III.9: Extent to Which Various Factors Explain the Impact on Multiyear Prime Contracts on Capital Investments



Note: MYSC means multiyear subcontract.

Figure III.10: Relationship Between Multiyear Prime Contracts' Impact on the Investments of the Typical Subcontractors and Their Multiyear Sales as a Percent of Total Sales for 1986



Note: Percentages are the median of subcontractors investing.

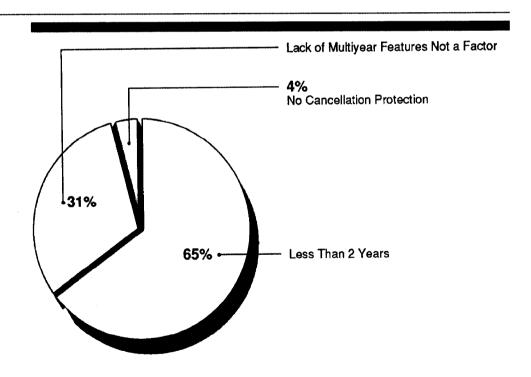
Circumstances in Which Multiyear Contracting Did Not Encourage Subcontractor Capital Investments Subcontractors most often reported that multiyear contracting did not influence their capital investment decisions because the prime contractor continued to subcontract on an annual basis. While regulations do not require prime contractors to use multiyear subcontracts, the regulations do encourage them to do so if certain conditions are met, as discussed in appendix II. Overall, 49 subcontractors making investments in equipment reported that multiyear contracting had little or no effect on these investments. Of the 23 subcontractors reporting the reason, 16 (69 percent) reported that the prime contractors' continued use of annual subcontracts explained, at least to some extent, multiyear contracting's failure to influence their decisions. In essence, multiyear contracting had little or no opportunity to influence the capital investments of these firms.

Another important aspect of multiyear contracts is that they may contain a provision to protect the subcontractor's interests in case the contract is canceled. For example, canceling a subcontract that does not

provide cancellation protection could lead to a financial loss for the subcontractor who incurred large tooling and other costs to begin production under the subcontract with the intention of recovering these costs over the life of the contract. Consequently, without cancellation protection, a multiyear subcontract's effect on subcontractor investment could be diminished if the subcontractor perceived the business risk associated with this subcontract to be greater than with a subcontract containing cancellation protection. Overall, 1 of the 23 firms reporting that multiyear contracting had not influenced their investment decisions cited lack of contract cancellation protection, rather than the lack of multiyear contracting, as a factor.

Consequently, of the 23 subcontractors reporting the reason that multiyear contracting had not affected the firms' capital investments, 17, or 69 percent, attributed this to either having essentially annual subcontracts (65 percent) or having multiyear subcontracts containing no cancellation protection (4 percent). (See fig. III.11.)

Figure III.11: Impact on Capital Investments of Subcontracts Lacking Multivear Features



Appendix III Survey Results of Subcontractors Working Under Multiyear Prime Contracts

Some of the prime contractors we visited told us that they did not always use multiyear subcontracts for two reasons.

- The subcontract was too small in value to justify the administrative burden and cost of assessing the savings and other benefits of multiyear contracting in relation to its costs and disadvantages.
- The subcontractor had the production capacity to produce the prime contractor's entire requirements under the multiyear prime contract more economically in 1 year.

Our survey results provide some confirmation for the latter explanation but not the first.

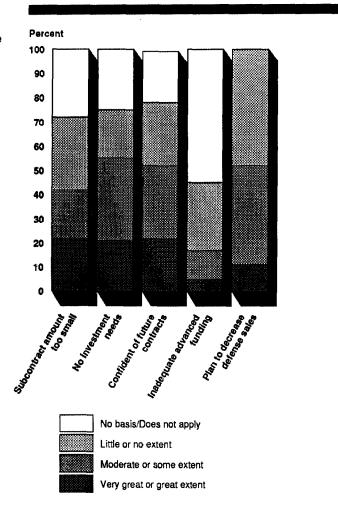
Subcontractor production capacity could explain the use of annual subcontracts if the subcontractor had an annual contract to meet the entire multiyear prime contract's requirements for the part or component being produced, or if the subcontractor had an annual subcontract that involved economic order quantities. About 25 percent of the subcontractors with subcontracts less than 2 years in length reported that their subcontracts involved more than 1 year of the multiyear prime contract's requirements. In addition, 11 percent of the subcontracts under 2 years in length involved economic order quantities, that is, there would be no additional economies achieved by a multiyear award. Overall, about 33 percent of these subcontracts involved either one or both of the conditions.

Subcontract size could explain the use of annual subcontracts if the average annual dollar values of annual subcontracts were significantly less than the values of multiyear subcontracts, indicating the possible aversion of prime contractors to use multiyear subcontracts for the smaller amounts. Although the average annual dollar value of subcontracts under 2 years was about \$625,000, or about \$110,000 less than the \$735,336 average annual value of multiyear subcontracts, the difference is not great.

Other factors cited less frequently to explain why multiyear contracting did not affect their capital investment decisions include: (1) small subcontract dollar amounts (these firms reported that the multiyear contracts accounted for only about 6 percent of their total 1986 defense sales, see fig. III.10), (2) lack of a need for manufacturing equipment, (3) confidence in continued business without a multiyear contract,

(4) inadequate advanced procurement funding, and (5) a business strategy to decrease the proportion of defense sales to the firm's total sales. (See fig. III.12.)

Figure III.12: Extent to Which Other Factors Not Related to the Type of Subcontract Prevented Multiyear Prime Contracts From Influencing Subcontractor Investments



Multiyear Contracting Does Not Limit Subcontract Competition

Multiyear contracting has helped subcontractor investments in equipment without limiting competition. Overall, 71 percent of the subcontractors we surveyed reported that their most recent subcontracts under a multiyear prime contract were competed.³ The level of competition generally was not affected by the use of either multiyear or annual subcontracts since no difference existed between the portion of multiyear subcontracts (about 70 percent) and annual subcontracts (about 71 percent) that were competed.

We also found little change in the subcontract's competitive status when the subcontractors' most recent subcontracts were preceded by a related subcontract. Subcontractors reported the type and competitive status for 195 of their most recent subcontracts that were preceded by a subcontract for similar products under the same program and prime contractor. The competitive status for 181 of the most recent subcontracts remained the same as the related subcontracts preceding them. Of the 14 most recent subcontracts remaining, 8 were multiyear subcontracts that had been competed but were preceded by noncompeted subcontracts. The remaining six included four multiyear subcontracts that had not been competed and were preceded by competed subcontracts and two annual subcontracts that had been competed and were preceded by noncompeted subcontracts.

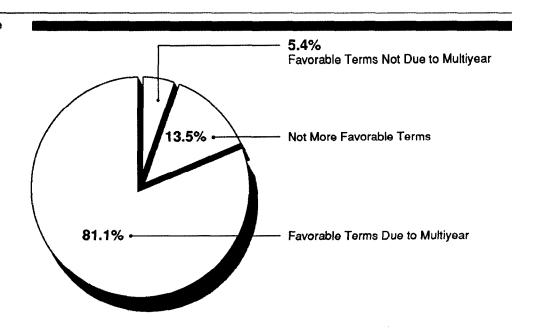
While multiyear prime contracting has not materially affected the competitive status of subcontracts, some subcontractors reported that multiyear contracting has improved the prime contractor's negotiating position on subcontracts that are not competed. As a result, subcontractors frequently reported that subcontract prices were reduced because of the more competitive subcontract environment. Seventy-four subcontractors reported that their subcontracts were awarded noncompetitively and involved some negotiations with the prime contractors. According to 64 (about 86 percent) of these subcontractors, the negotiations resulted in more favorable terms to the prime contractor than the subcontractors initially proposed. This included price reductions averaging about 11 percent, greater product performance, higher product reliability, and greater assurance of meeting product delivery dates. About 95 percent (60 of the 63) of the subcontractors reported that they were more willing to agree to terms more favorable to the prime contractor

³Our survey defined (1) competition to refer to subcontract awards based on solicitations to two or more responsible offerors and (2) noncompetition to refer to awards based on solicitation to only one responsible offeror. We based our definitions on the DOD guidance in effect at the time that most of the multiyear prime contracts we surveyed were awarded.

Appendix III Survey Results of Subcontractors Working Under Multiyear Prime Contracts

because of the multiyear contracts. (See fig. III.13.) These subcontractors most frequently attributed the influence of multiyear prime contracts on subcontract negotiations to either the resulting large business base or the reduced risk of capital equipment investments that attract potential competitors by increasing the likelihood that they will recover the high initial costs generally required to begin production under a new contract.

Figure III.13: Impact of Multiyear Prime Contracts on Noncompeted and Negotiated Subcontracts



The Effect of Multiyear Contracting at Selected Contractors

This appendix discusses the effect of multiyear contracting on the capital investments of each of the prime contractors and subcontractors selected for our on-site reviews. For the prime contractors, we present the overall effect multiyear contracting has had on investment decisions and competition among the prime contractors' subcontractors. For the subcontractors, we present summary data on the effect multiyear contracting has had on investment decisions as well as whether the prime contractors entered into multiyear contracts with them.

Prime Contractors

Multiyear contracting has greatly affected capital investment decisions according to two of the six prime contractors we reviewed. Moreover, three prime contractors told us that multiyear contracting has increased competition among subcontractors. All six prime contractors produce primarily defense-related products with the multiyear contracts contributing varying amounts to the defense sales. Table IV.1 summarizes our findings for each prime contractor.

Table IV.1: Summary of Multiyear Contracting's Effect on the Investment Decisions and Subcontractor Competitive Environment for Selected Prime Contractors

**************************************	Multiyear contract				
Prime contractor	Percent of 1985 sales	Greatly affected investments	Increased subcontract competition	Comments	
General Dynamics, Ft. Worth	88	No	Yes	IMIP was primary driver of investment.	
General Dynamics, Land Systems	85	Yes	Yes	MYC ^a assured economic production.	
Grumman Aerospace	10	No	No	investment was same under MYC.	
LTV Missiles Division	51	No	No	Invested before MYC.	
Rockwell Satellite Systems	59	Yes	No	MYC enhanced production stability/ efficiency.	
Sikorsky	42	No	Yes	MYC did not enhance stability. Invested before MYC.	

^aMYC means multiyear contract.

Subcontractors

To better understand our more comprehensive survey results, we performed on-site reviews of 13 subcontractors having subcontracts under a multiyear prime contract. Table IV.2 summarizes our findings related to each subcontractor in terms of whether (1) its business is primarily defense oriented, (2) the prime contractor used a multiyear contract with the subcontractor, (3) the subcontract included cancellation protection, and (4) the subcontract has greatly affected the subcontractor's capital investment decisions.

Table IV.2: Summary of Multiyear Contracting's Effect on the Capital Investment Decisions of Selected Subcontractors

Subcontractor	Primarily defense oriented	Received MYC ^a	Cancellation protection	MYC greatly influenced investments
A	Yes	Yes	Yes	Yes
В	No	Yes	Yes	No
C	Yes	Yes	Yes	Yes
D	Yes	Yes	Yes	No
E	Yes	Yes	Yes	No
F	Yes	Yes	Yes	Yes
G	Yes	Yes	not applicable	Yes
Н	Yes	Yes	not applicable	Yes
	Yes	No	not applicable	Yes ^b
J	Unknown	Yes	Yes	Yes
K	No	Yes	Yes	No
L	Yes	Yes	Yes	Yes
 М	No	Yes	Yes	No

^aMYC means multiyear contract.

Our analysis of subcontractor C illustrates what we found when visiting the subcontractors. Subcontractor C has been involved in developing and manufacturing materials for a weapon system now under a multiyear prime contract. This subcontractor owns and operates its plant with total sales in 1985 of about \$29.8 million. Total defense sales in 1985 were about \$17.6 million, about 80 percent of which were for subcontracts under the multiyear prime contract. These subcontracts totaled about \$36.2 million for periods varying from 2 to 3 years. Included in the \$36.2 million total is about \$7.5 million for materials and \$28.7 million for labor to produce the product. The \$7.5 million in materials was part of a larger subcontract for other materials to be supplied by other divisions of the subcontractor's parent firm. The materials contract did not include a cancellation clause, but the prime contractor provided cancellation protection by agreeing to purchase all materials to satisfy the total requirement of the multiyear contract even if the program were canceled. The prime contractor was to prepay about 65 percent of the materials ordered upon contract award with the remainder to be prepaid within 15 months. According to a prime contractor official, the risks of this arrangement to the prime contractor were minimal because the materials could be used for other programs if the multiyear program were canceled. The \$28.7 million subcontracts for labor also did not include cancellation clauses, but these subcontracts provided

^bThis subcontractor invested in equipment based on receiving a multiyear contract that never materialized

Appendix IV
The Effect of Multiyear Contracting at
Selected Contractors

some cancellation protection by reimbursing the subcontractor for all nonrecurring tooling costs.

The multiyear subcontracts had a great effect on subcontractor C's capital investments. The plant manager told us that the multiyear contract provided the necessary program stability to allow the subcontractor to commit to long-term capital investments. This is an important consideration because one of the contractor's investment criteria is to recover the full cost of the investment during the contract period. As a result, the subcontractor invested in more and better equipment than would have been possible under less certain successive annual contracts. We noted that subcontractor capital expenditures increased substantially after award of the multiyear contract, and several capital equipment items were approved based specifically on this contract. The subcontractor invested a total of about \$754,000 in capital equipment due to the multiyear contract, of which \$524,000 was made during the first year of the multiyear subcontract. This is about one and a half times the total capital investments made during the preceding year. Subcontractor officials told us that the equipment has made them more competitive for followon defense work.

Comments



ASSISTANT SECRETARY OF DEFENSE WASHINGTON, D.C. 20301-8000

PRODUCTION AND LOGISTICS P/DSPS

9 MAR 1988

Mr. Frank C. Conahan Assistant Comptroller General National Security and International Affairs Division U.S. General Accounting Office Washington, DC 20548

Dear Mr. Conahan:

This is the Department of Defense (DoD) response to the General Accounting Office (GAO) draft report "PROCUREMENT: Multiyear Contracting And Its Impact In Investment Decisions," dated January 12, 1988 (GAO Code 396518/OSD Case 7517).

The DoD has reviewed the GAO report, and concurs with the findings and conclusions. The Department does not have further comment on the report.

Sincerely,

Robert C. Mc Comack for

Jack Katzen
Deputy Assistant Secretary of Defense
(Systems)



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